

How to interpret an ECG

(I) **General look** to ECG may give an idea about the major abnormality in the ECG which is the written in the final diagnosis.

(II) To avoid overlooking any abnormality **pass in the following sequence** :

(1) Look to **long strip** or any lead showing the waves obviously (usually lead II), then

Search for : (a) **AV block** : By noticing **PR**.

(b) **Rhythm**: By noticing **pacemaker**.

(2) Look to the **12 leads** of the ECG & try to find the abnormalities in their specific leads in the following sequence :

- Atrial enlargement : in II – V₁.

- BBB (wide QRS) : in V₁₋₂ - V₅₋₆.

NB: If there is BBB don't search for :

- Myocardial ischemia .

- Ventricular enlargement .

- Myocardial infarction (except if RBBB).

- Hemiblock (except if RBBB).

- Ventricular enlargement: in V₁₋₂ - V₅₋₆.

- Axis : in limb leads (especially I / III, aVF).

- Hemiblock: in limb leads.

- Myocardial infarction: in each wall leads.

• Comment on : - Age of MI.

- Site of MI.

- Reciprocal 'ST' ↓↓ .

- Myocardial ischemia : in each wall leads.

• Comment on: Site.

- Others :

• Electrolyte disturbance e.g. Hyperkalemia.

• Drugs e.g. Digitalis effect.

• Low voltage (in I, II, III).

• Pericarditis.

• Preexcitation syndrome.

How to write an ECG report

1. Write the diagnosis at the bottom of the paper : which includes

a. Rhythm.

b. AV block (if present).

c. Other positive abnormalities (if present).

NB: Don't mention the -ve diagnosis.

2. Write the report at the higher portion of the paper :

• **By** - Describing the ECG abnormalities denoting your diagnosis.

- Describing the Normal ECG findings.

• **In the following sequence** : 1. Regularity.

2. Rate.

3. Waves:

- P :

- PR:

- QRS :

a . Axis.

b. Width.

c. Amplitude (I, II, III, V₁₋₂, V₅₋₆).

d. Waves.

- ST :

- T:

- QT:

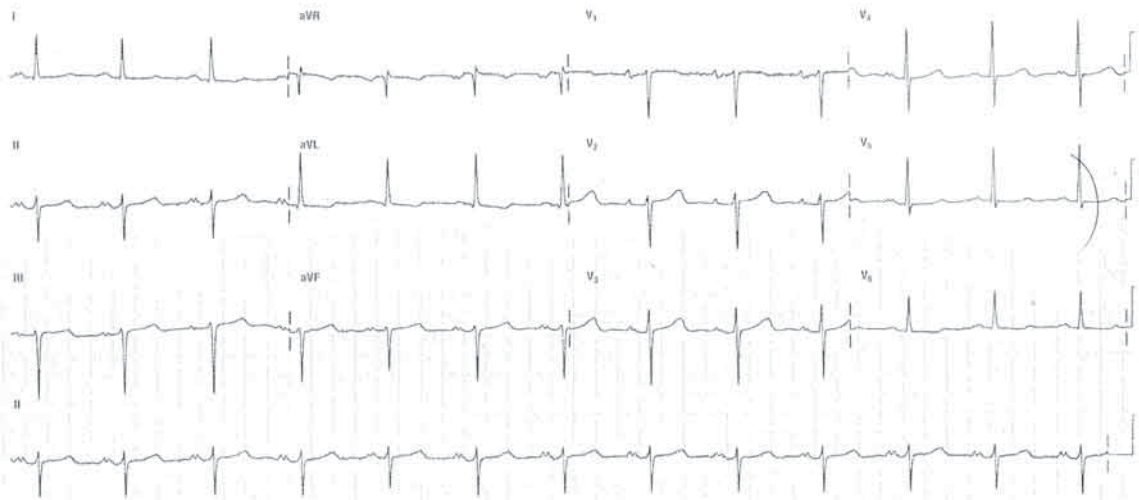
VISIT...

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ECG REPORT		
ECG comment		
- Rhythm		
- Rate		
- P		
- PR		
- QRS	Amplitude	
	Width	
	Axis	
	Wave	
- ST		
- T		
- QT		
ECG diagnosis		
- AV block	Strip	
- Rhythm	Strip	
- Atrial +++	II, V ₁	
- BBB	V _{1,2} - V _{5,6}	
- Vent. +++	V _{1,2} - V _{5,6}	
- Axis & hemiblock	I / III, F	
- MI (age - site)	Wall - Wall	
- Ischemia (site)	Wall - Wall	
- Low voltage	I + II + III	
- Digitalis		
- Hyperkalemia		
ECG comment		
- Rhythm		
- Rate		
- P		
- PR		
- QRS	Amplitude	
	Width	
	Axis	
	Wave	
- ST		
- T		
- QT		
ECG diagnosis		
- AV block	Strip	
- Rhythm	Strip	
- Atrial +++	II, V ₁	
- BBB	V _{1,2} - V _{5,6}	
- Vent. +++	V _{1,2} - V _{5,6}	
- Axis & hemiblock	I / III, F	
- MI (age - site)	Wall - Wall	
- Ischemia (site)	Wall - Wall	
- Low voltage	I + II + III	
- Digitalis		
- Hyperkalemia		

EXAMPLES

1



REPORT

- **Regularity:** Regular.
- **Rate:** 75/minute.
- **P:** Broad & notched (P-mitrale).
- **PR:** Normal.
- **QRS:**
 - **Width:** Normal.
 - **Amplitude:** Normal.
 - **Axis:** -60° (Left axis deviation).
 - **Waves:** Deep 'S' in II, III, aVF.
- **ST:** Normal.
- **T:** Normal.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Left atrial dilatation.
- Left anterior hemiblock.

2



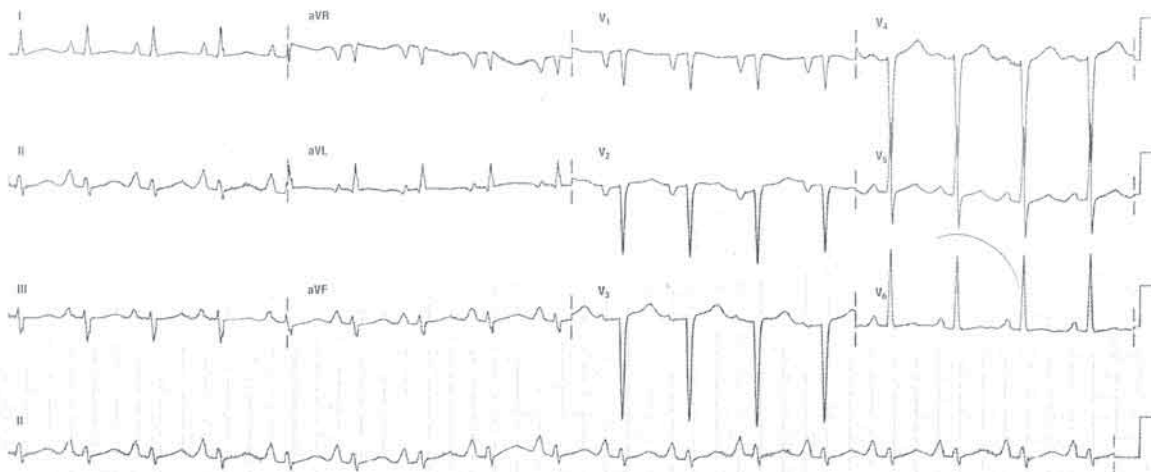
COMMENT

- **Regularity:** Regular.
- **Rate:** 90/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Normal sinus rhythm (N.S.R.)

3



REPORT

- **Regularity:** Regular.
- **Rate:** 100/minute.
- **P:** Tall & peaked (P- Pulmonale).
- Negative deflection in $V_1 > 1\text{mm} \times 1\text{mm}$.
- **PR:** Normal.
- **QRS:**
 - **Width:** Normal.
 - **Amplitude:** Normal.
 - **Axis:** -10° (Normal horizontal axis).
 - **Waves:** Pathological 'Q' in $V_1 - V_3$.
 - rS in V_4 .
 - Deep 'S' in III & aVF.
- **ST:** Normal.
- **T:** Flat in I & aVL.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Biatrial enlargement.
- Old anteroseptal myocardial infarction.
- High lateral myocardial ischemia.

4



COMMENT

- **Regularity:** Regular.
- **Rate:** 150/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----.
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Sinus Tachycardia.

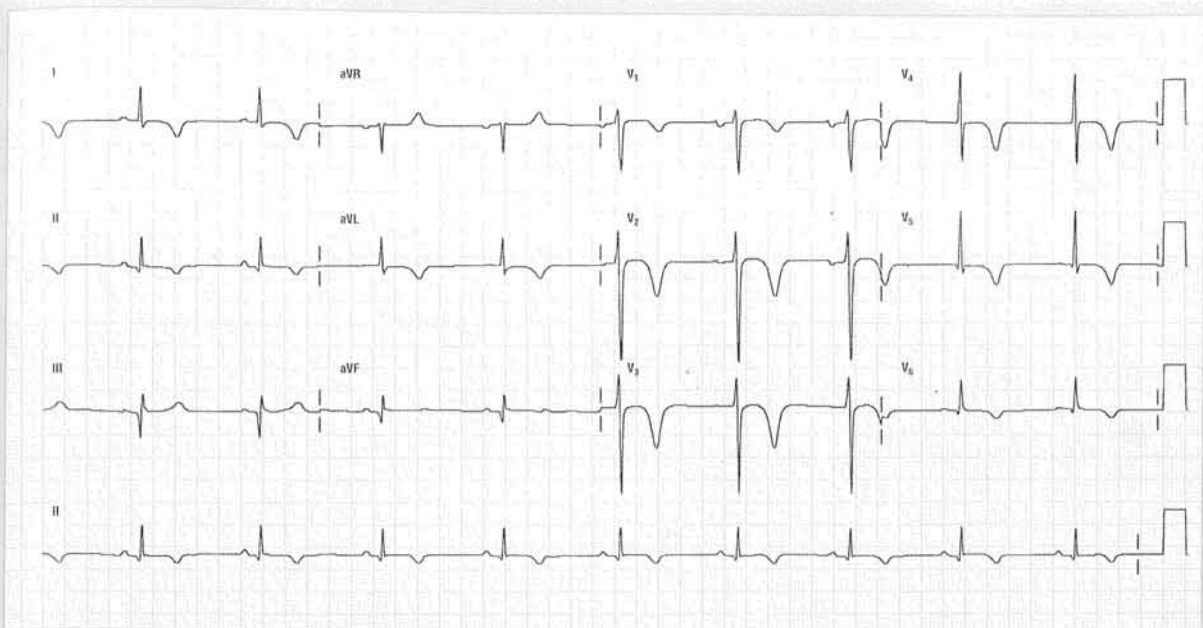
- **Regularity**: Regular.
- **Rate**: 70/minute.
- **P**: Negative deflection in $V_1 > 1\text{mm} \times 1\text{mm}$.
- **PR**: Normal.
- **QRS**:
 - Width: Normal except $N^{\circ} 5$ is wide.
 - Amplitude: '**R**' in $V_6 > \text{'R'}$ in V_5 .
 - Axis: -30° (Horizontal axis).
 - Waves: . Poor '**R**' progression in chest leads.
 . Deep '**S**' in II, III & aVF.
- **ST**: Normal.
- **T**: Inverted in I & aVL. & opposite '**QRS**' in 5^{th} beat in strip.
- **QT**: Normal.

- Normal sinus rhythm with premature ventricular beat N° 5
- Left atrial enlargement.
- Left ventricular enlargement.

- **Regularity:** Regular.
- **Rate:** 50/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----.
- **Ventricular activity:** -----
- **P : QRS:** -----

- Sinus Bradycardia.

7



REPORT

- **Regularity:** Regular.
- **Rate:** 55/minute.
- **P:** Negative deflection in $V_1 > 1\text{mm} \times 1\text{mm}$.
- **PR:** Normal.
- **QRS:**
 - **Width:** Normal.
 - **Amplitude:** Normal.
 - **Axis:** 0° (Normal horizontal axis).
 - **Waves:** Pathological 'Q' in III&aVF
- **ST:** Normal.
- **T:**
 - Symmetrically inverted 'T' waves in I, aVL, V_1 - V_6 & II.
 - Flat 'T' in aVF.
- **QT:** Normal.

DIAGNOSIS

- Sinus bradycardia.
- Left atrial enlargement.
- Old inferior myocardial infarction.
- Extensive anterior myocardial ischemia.

8



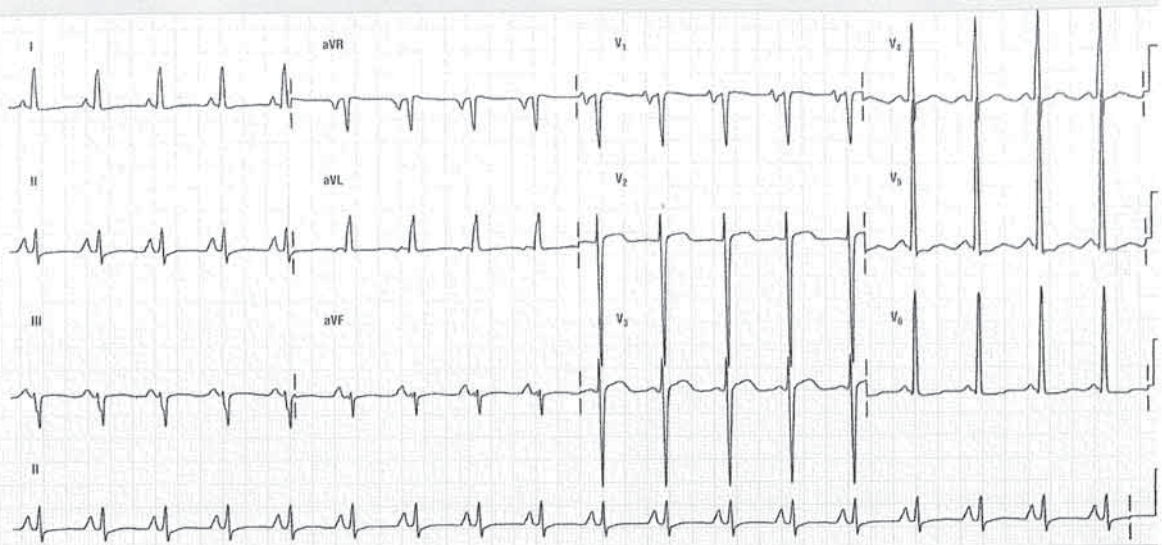
COMMENT

- **Regularity:** Irregular.
- **Rate:** 80/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Sinus Arrhythmia.

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REPORT

- **Regularity:** Regular.
- **Rate:** 105/minute.
- **P:** Tall & peaked in II (P- Pulmonale).
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
 - **Amplitude:** 'R' in V₅ = 35mm (>25mm).
 - **Axis:** -10° (Horizontal normal axis).
 - **Waves:** . Deep 'S' in III & aVF.
- **ST:** Normal.
- **T:** Flat in I, aVL, II, III, aVF.
- **QT:** Normal.

DIAGNOSIS

- Sinus tachycardia.
- Right atrial dilatation.
- Left ventricular enlargement.
- Inferior and high lateral myocardial ischemia.

10



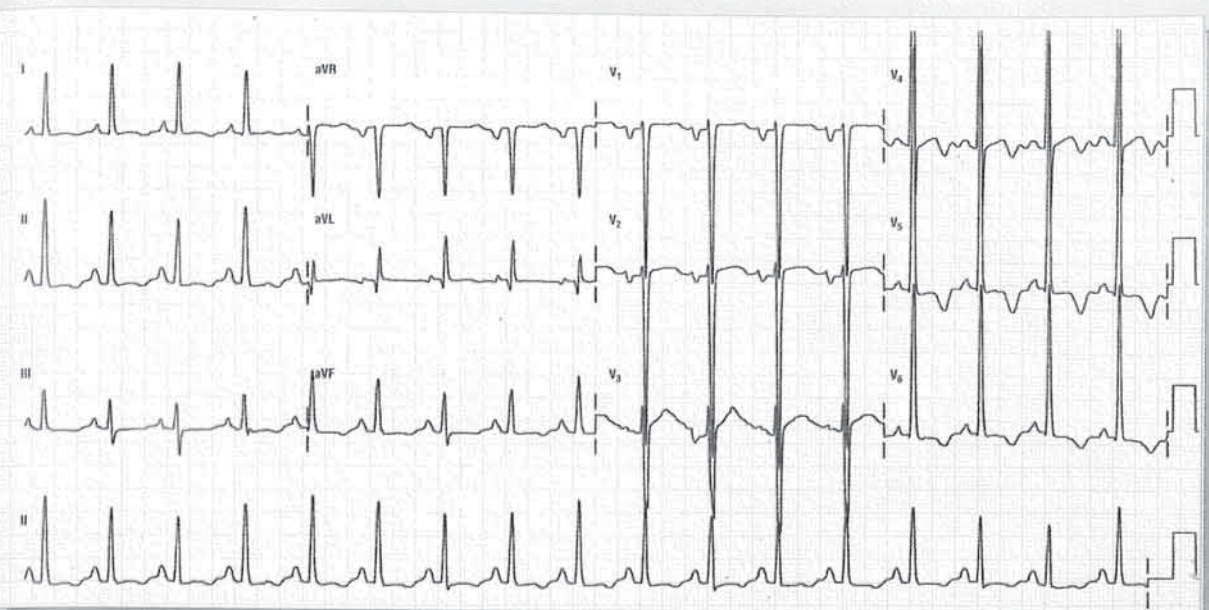
COMMENT

- **Regularity:** Regular.
- **Rate:** 250/minute.
- **Atrial activity:** Atrial 'P'.
- **PR:** -----.
- **Ventricular activity:** -----.
- **P : QRS:** -----.

DIAGNOSIS

- Atrial tachycardia (supraventricular tachycardia)

11



REPORT

- **Regularity:** Regular.
- **Rate:** 100/minute.
- **P:** Tall & peaked (P- Pulmonale)
& -ve deflection in $V_1 > 1\text{mm} \times 1\text{mm}$.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
- **Amplitude:** 'R' in $V_5 > 55\text{mm} (>25\text{mm})$.
- **Axis:** $+45^\circ$ (Normal).
- **Waves:** Normal.
- **ST:** Normal.
- **T:** - Inverted in $V_3 - V_6, I, II$ & aVF.
- Flat in III & aVL.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Biatrial enlargement.
- Left ventricular hypertrophy.
- Inferolateral myocardial ischemia.

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COMMENT

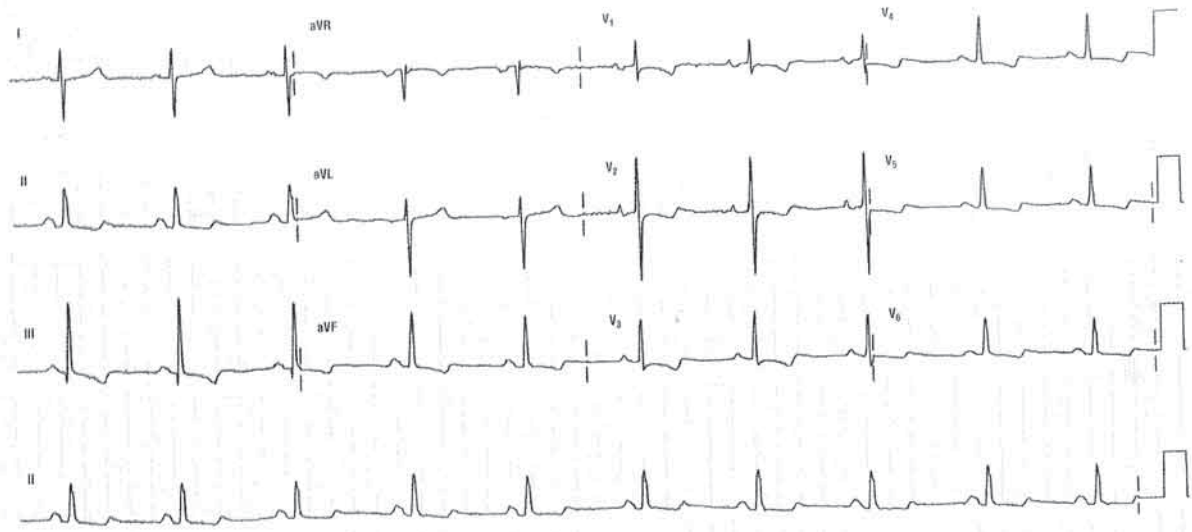
- **Regularity:** Regular.
- **Rate:** 70/minute.
- **Atrial activity:** Flutter waves.
- **PR:** -----.
- **Ventricular activity:** -----
- **P : QRS:** 4 : 1

DIAGNOSIS

- Atrial Flutter 4 : 1.

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REPORT

- **Regularity:** Regular.
- **Rate:** 60/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:**
 - **Width:** Normal.
 - **Amplitude:** 'R' in V₁ is tall (R/S ratio >1).
 - **Axis:** +120° (Right axis deviation).
 - **Waves:** Deep 'S' in I & aVL.
- **ST:** Normal.
- **T:** Inverted in V₁ - V₆, II, III & aVF.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Right ventricular hypertrophy.
- Anteroinferior myocardial ischemia.

14



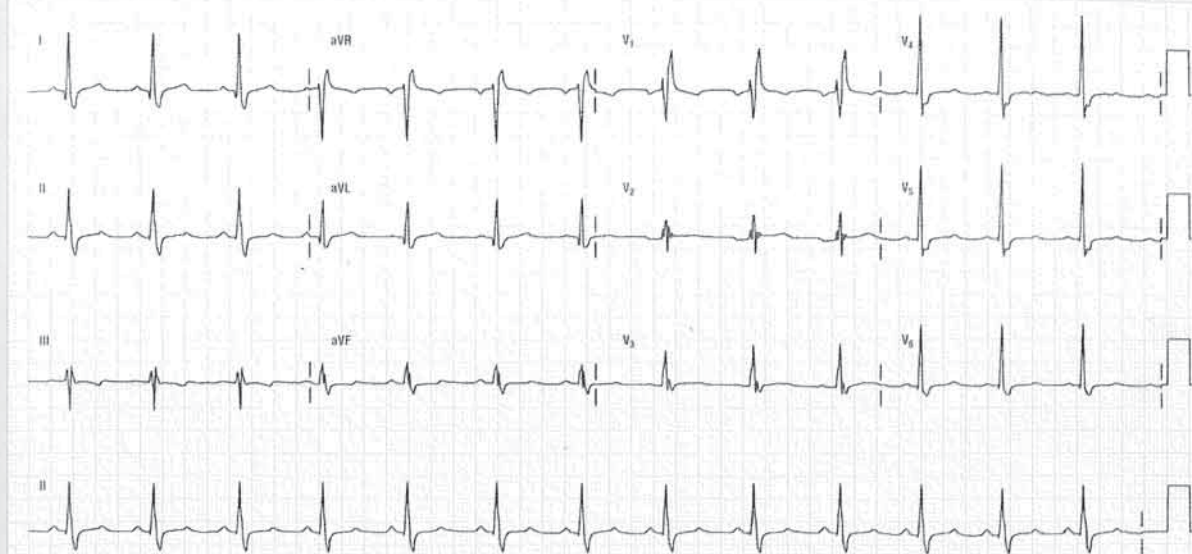
COMMENT

- **Regularity:** Regular.
- **Rate:** 150/minute.
- **Atrial activity:** Flutter waves.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** 2 : 1

DIAGNOSIS

- Atrial Flutter 2 : 1.

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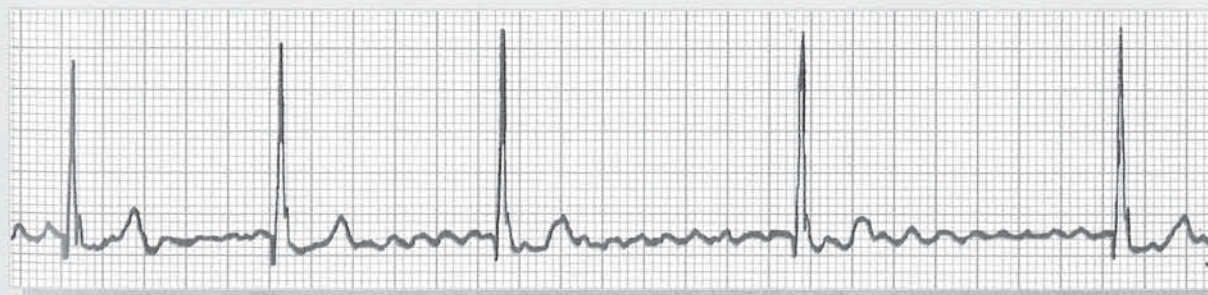
REPORT

- **Regularity:** Regular.
- **Rate:** 70/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:**
 - **Width:** wide (>3mm).
 - **Amplitude:** Normal.
 - **Axis:** 0° (Horizontal axis).
 - **Waves:** 'rSR' in V_1 & slurred 'S' in V_5 , V_6 & I.
- **ST:** Normal.
- **T:** Inverted in V_1 , III.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Right bundle branch block (complete).

16



COMMENT

- **Regularity:** Irregular.
- **Rate:** 50/minute.
- **Atrial activity:** Fibrillatory waves.
- **PR:** -----.
- **Ventricular activity:** -----
- **P : QRS:** -----

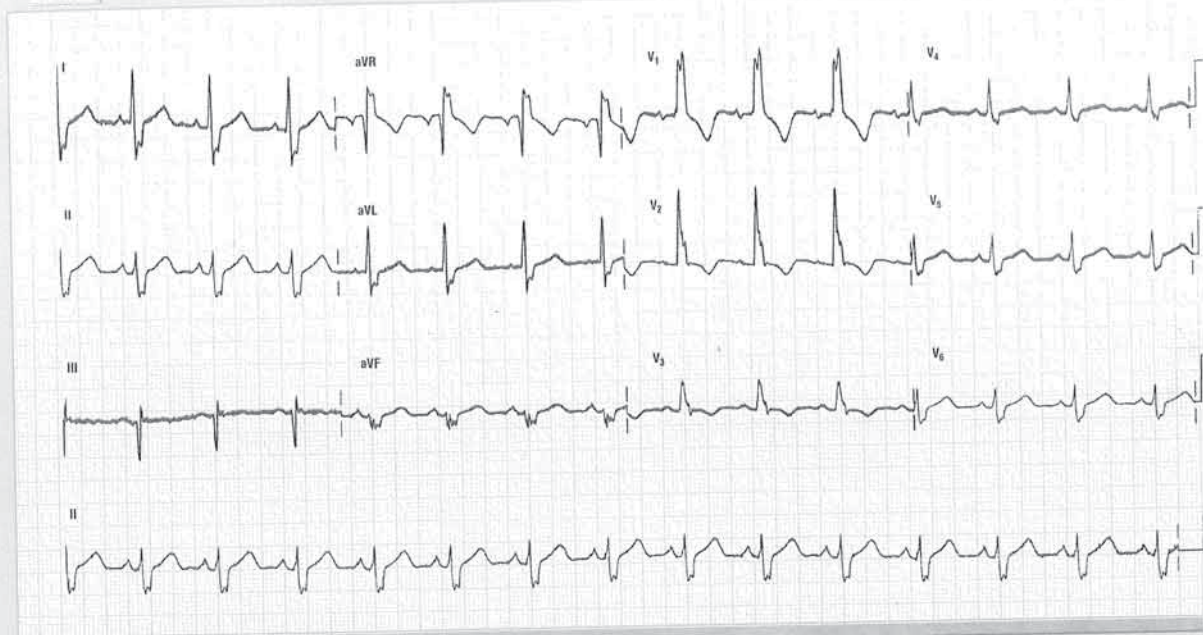
DIAGNOSIS

- Coarse atrial fibrillation with slow ventricular response..

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Electrocardiogram

17



REPORT

- **Regularity:** Regular.
- **Rate:** 90/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:**
 - **Width:** wide (>3mm).
 - **Amplitude:** Normal.
 - **Axis:** -30° (Horizontal axis).
 - **Waves:** 'RR' (monophasic notched 'R') in V_1 & slurred 'S' in V_5 , V_6 & I.
- **ST:** Normal.
- **T:** Inverted.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Right bundle branch block

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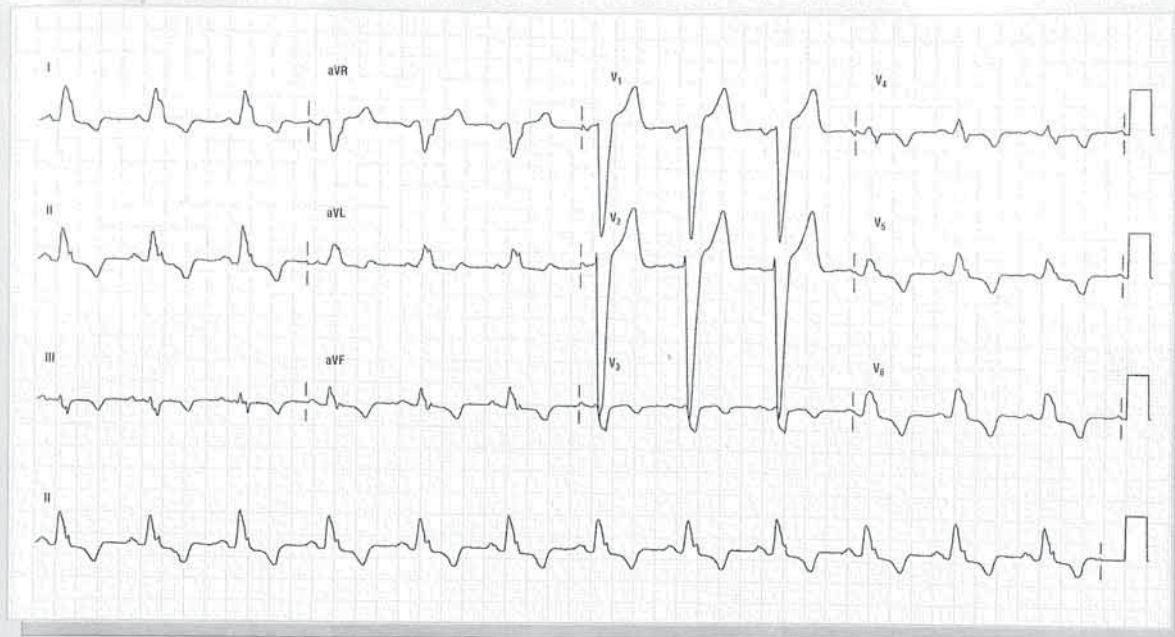
COMMENT

- **Regularity:** Irregular.
- **Rate:** 80/minute.
- **Atrial activity:** Flutter waves.
- **PR:** -----.
- **Ventricular activity:** -----
- **P : QRS:** Variable block.

DIAGNOSIS

- Atrial Flutter with variable bloc

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REPORT

- **Regularity:** Regular.
- **Rate:** 80/minute.
- **P:** Broad & notched (P-mitrale) in II & -ve deflection in $V_1 > 1\text{mm} \times 1\text{mm}$ (borderline).
- **PR:** Normal.
- **QRS:** - **Width:** wide ($>3\text{mm}$).
 - **Amplitude:** Insignificant.
 - **Axis:** $+10^\circ$ (Normal).
 - **Waves:** 'rS' in V_1 & monophasic notched 'R' in V_5, V_6 & I.
- **ST:** Normal.
- **T:** 2ry inversion in most leads.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Left atrial dilatation (possible).
- Left bundle branch block (complete).

20



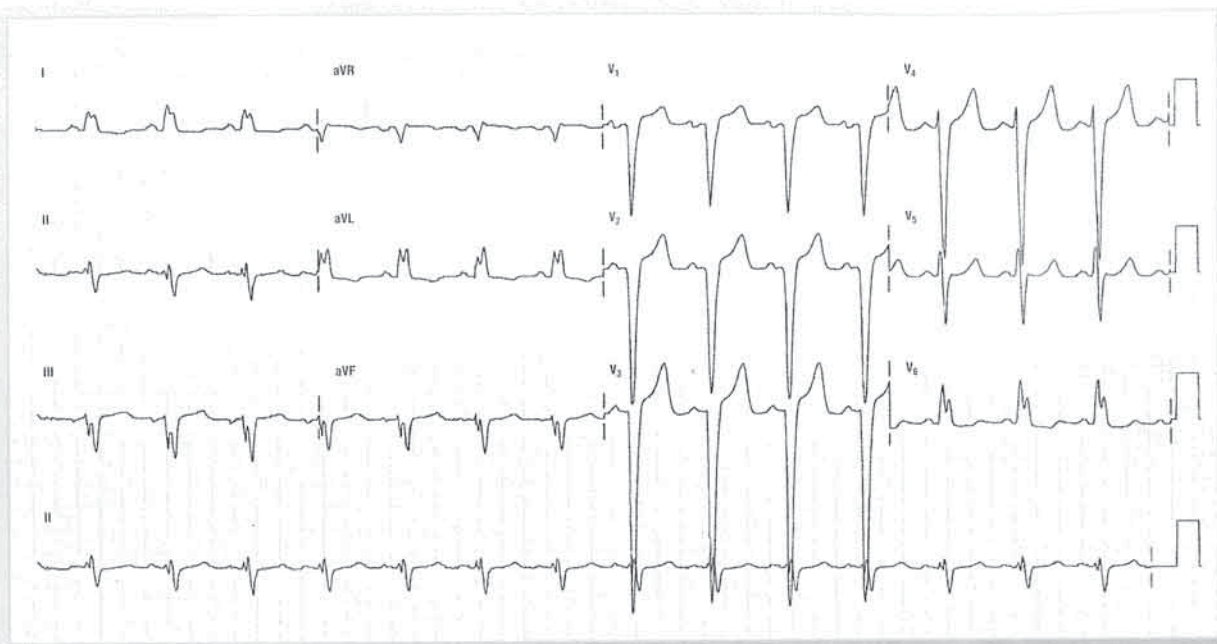
COMMENT

- **Regularity:** Irregular.
- **Rate:** 80/minute.
- **Atrial activity:** Fibrillatory waves.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Coarse atrial fibrillation with normal ventricular response.

21



REPORT

- **Regularity:** Regular.
- **Rate:** 95/minute.
- **P:** Broad & notched (P-mitrale) in II
- **PR:** Normal.
- **QRS:** - **Width:** wide (>3mm).
 - **Amplitude:** Insignificant.
 - **Axis:** -50° (Left axis deviation).
 - **Waves:** 'rS' in V_1 & monophasic notched 'R' in V_6 & I.
- **ST:** Normal.
- **T:** 2ry inversion in V_6 & I & aVL.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Left atrial dilatation.
- Left bundle branch block (complete).

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COMMENT

- **Regularity:** Irregular.
- **Rate:** 110/minute.
- **Atrial activity:** Fibrillatory waves.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Fine atrial fibrillation with rapid ventricular response.

23



REPORT

- **Regularity:** Regular.
- **Rate:** 95/minute.
- **P:** Broad (P-mitrale) in II.
- **PR:** Long.
- **QRS:** - **Width:** Wide.
- **Amplitude:** Insignificant.
- **Axis:** -50° (Left axis deviation).
- **Waves:** - 'rS' in V_1 & V_2
- Slurred 'S' in V_5 & V_6 .
- **ST:** Insignificant.
- **T:** Insignificant.
- **QT:** Normal.

DIAGNOSIS

- 1st degree heart block.
- Normal sinus rhythm.
- Left atrial dilatation.
- Intraventricular conduction delay (Diffuse).

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COMMENT

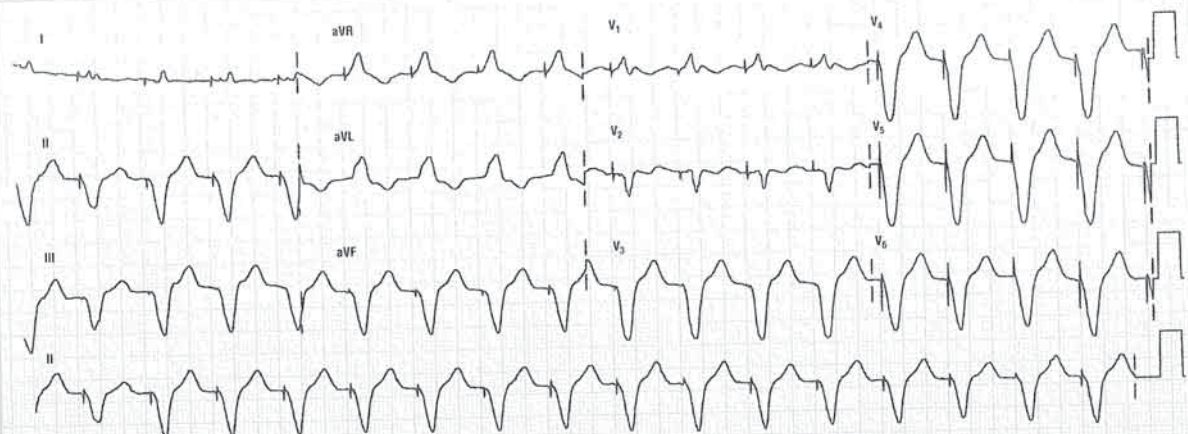
- **Regularity:** Irregular.
- **Rate:** 40/minute.
- **Atrial activity:** 3 different 'P's.
- **PR:** Variable
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Wandering atrial pacemaker.

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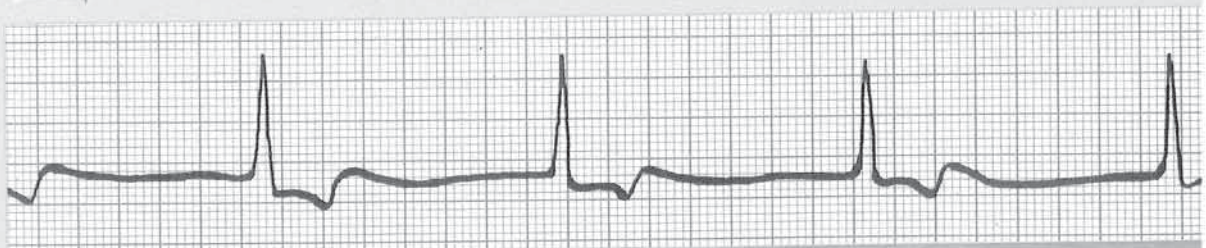
REPORT

- **Regularity:** Regular.
- **Rate:** 95/minute.
- **P:** Invisible.
- **PR:** -----
- **QRS:** - **Width:** Wide.
- **Amplitude:** -----
- **Axis:** (Left axis deviation).
- **Waves:** - 'RS' in V₁ & 'QS' V₂ - V₆.
- Ventricular pacemaker spike before each 'QRS'.
- **ST:** -----
- **T:** -----
- **QT:** -----

DIAGNOSIS

- Artificial ventricular pacemaker.

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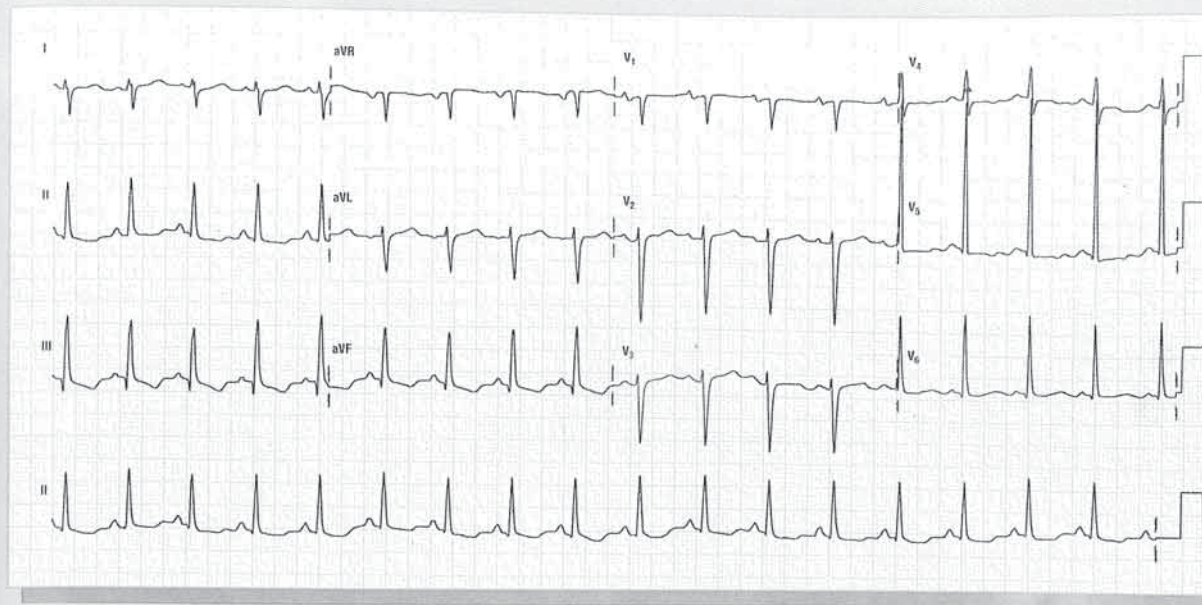
COMMENT

- **Regularity:** Regular.
- **Rate:** 40/minute.
- **Atrial activity:** Hidden 'P'.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Escape junctional rhythm.

27 |



REPORT

- **Regularity:** Regular.
- **Rate:** 100/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
 - **Amplitude:** 'R' in V_5 = 34 mm (>25mm).
 - **Axis:** $+110^\circ$ (Right axis deviation).
 - **Waves:** - Deep 'S' in I & L.
- **ST:** Normal.
- **T:** Inverted in II, III, F.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Left ventricular enlargement.
- Left posterior hemiblock.
- Inferior myocardial ischemia.

28 |



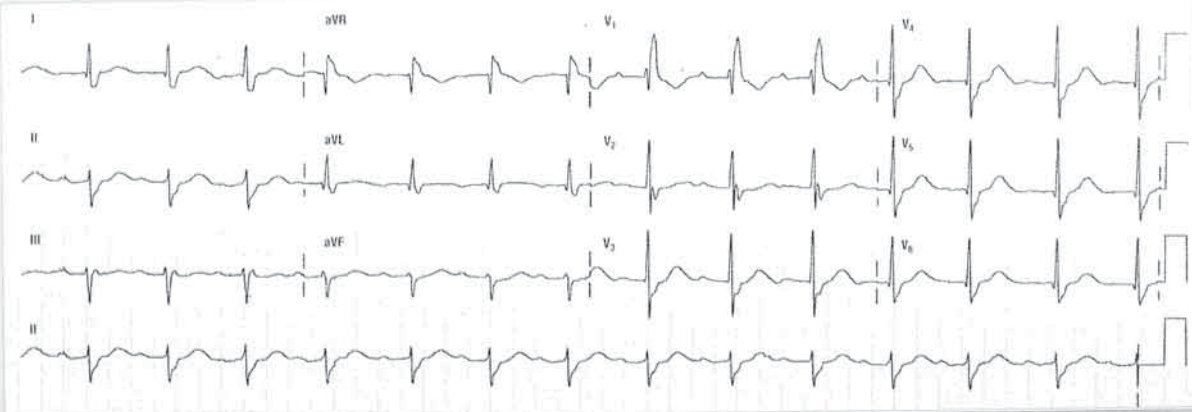
COMMENT

- **Regularity:** Regular.
- **Rate:** 75/minute.
- **Atrial activity:** Hidden 'P'.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Accelerated junctional rhythm.

29



REPORT

- **Regularity:** Regular.
- **Rate:** 70/minute.
- **P:** Normal.
- **PR:** Long.
- **QRS:** - **Width:** Wide.
- **Amplitude:** Normal.
- **Axis:** Left axis deviation.
- **Waves:** - 'rSR' in V₁ & slurred 'S' in V₅, V₆ & I
- Deep 'S' in II, III, aVF.
- **ST:** Normal.
- **T:** Inverted in V₁.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Trifascicular block:
 - 1st degree heart block.
 - Right bundle branch block.
 - Left anterior hemiblock.

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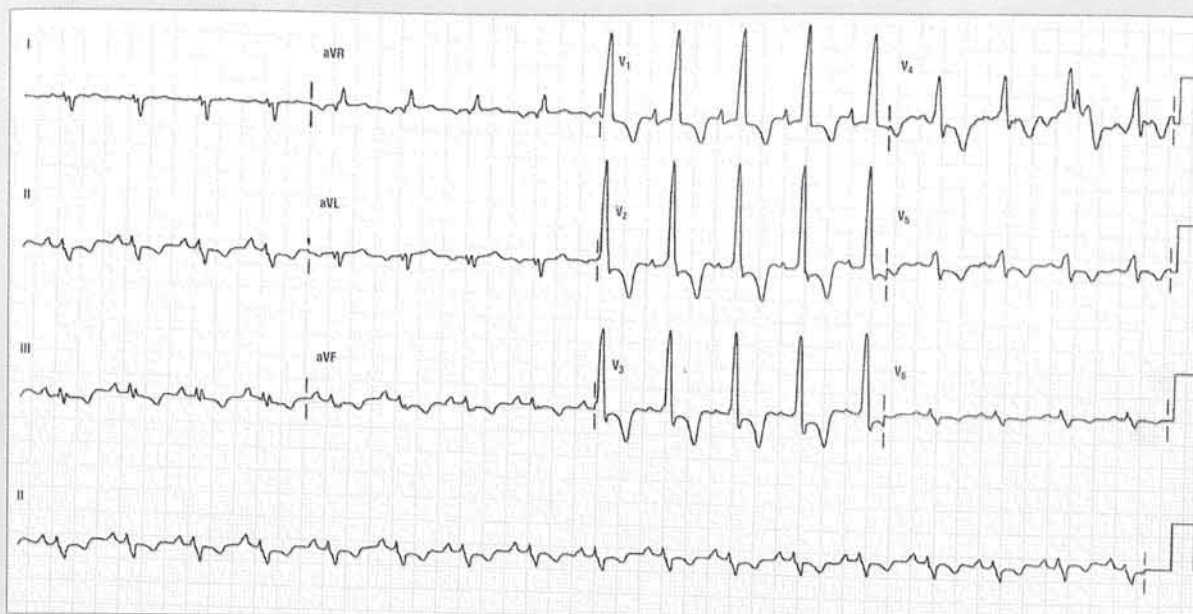
COMMENT

- **Regularity:** Regular.
- **Rate:** 100/minute.
- **Atrial activity:** Retrograde 'P'.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Accelerated junctional rhythm.

31 |



REPORT

- **Regularity:** Regular.
- **Rate:** 100/minute.
- **P:** +ve deflection in $V_1 > 1.5\text{mm}$.
- **PR:** Normal.
- **QRS:**
 - **Width:** Normal.
 - **Amplitude:** - 'R' in $V_1 > 7\text{mm}$.
 - 'QRS' in $I + II + III < 15\text{mm}$.
 - **Axis:** Normal.
 - **Waves:** -----
- **ST:** Normal.
- **T:** Inversion in II, III, aVF, $V_1 - V_6$.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Right atrial dilatation.
- Right ventricular hypertrophy.
- Low voltage.
- Inferoanterior myocardial ischemia.

32 |



COMMENT

- **Regularity:** Regular.
- **Rate:** 215/minute.
- **Atrial activity:** Retrograde 'P'.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- AVN (junctional) reentrant tachycardia = supraventricular tachycardia.

33



REPORT

- **Regularity:** Regular.
- **Rate:** 80/minute.
- **P:** - Tall and peaked (P-pulmonale) in II.
- +ve deflection in $V_1 > 1.5$ mm.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
- **Amplitude:** 'R' in $V_1 > 7$ mm.
- **Axis:** $+120^\circ$ (Right axis deviation).
- **Waves:** - Deep 'S' in I & aVL.
- **ST:** Depressed in V_1 & V_2 - II, III & aVF.
- **T:** Inverted in II, III, aVF - V_1 - V_6 .
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Right atrial dilatation.
- Right ventricular enlargement.
- Inferoanterior myocardial ischemia

34



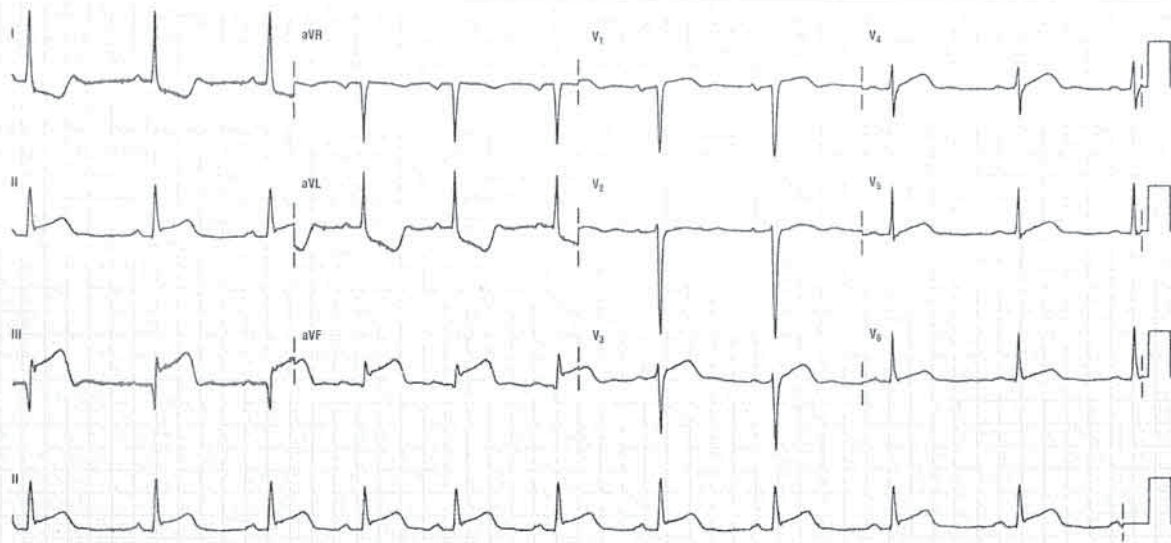
COMMENT

- **Regularity:** Regular.
- **Rate:** 210/minute.
- **Atrial activity:** Hidden 'P'.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Supraventricular tachycardia (AVNRT).

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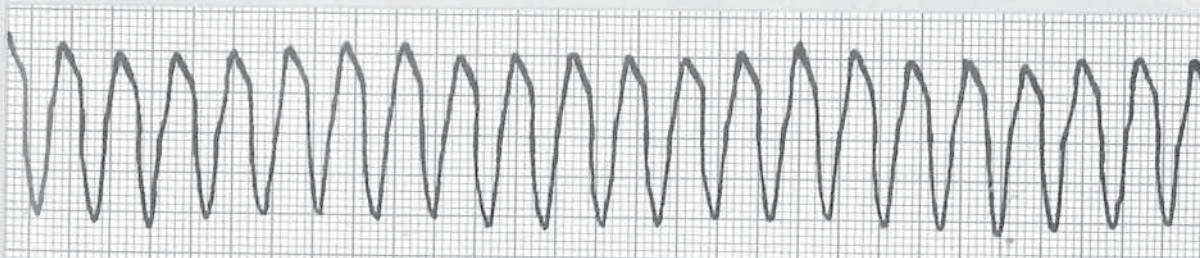
REPORT

- **Regularity:** Irregular.
- **Rate:** 75/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
 - **Amplitude:** Normal.
 - **Axis:** $+20^\circ$ (Normal axis).
 - **Waves:** Poor 'R' progression in chest leads.
- **ST:** - Elevated in II, III & aVF.
 - Depressed in I & aVL.
- **T:** Inverted in I & aVL.
- **QT:** Normal.

DIAGNOSIS

- Sinus arrhythmia on a normal rate.
- Hyperacute inferior myocardial infarction.
- Old anteroseptal myocardial infarction (possible).
- Receptorcal 'ST' depression in high lateral leads.

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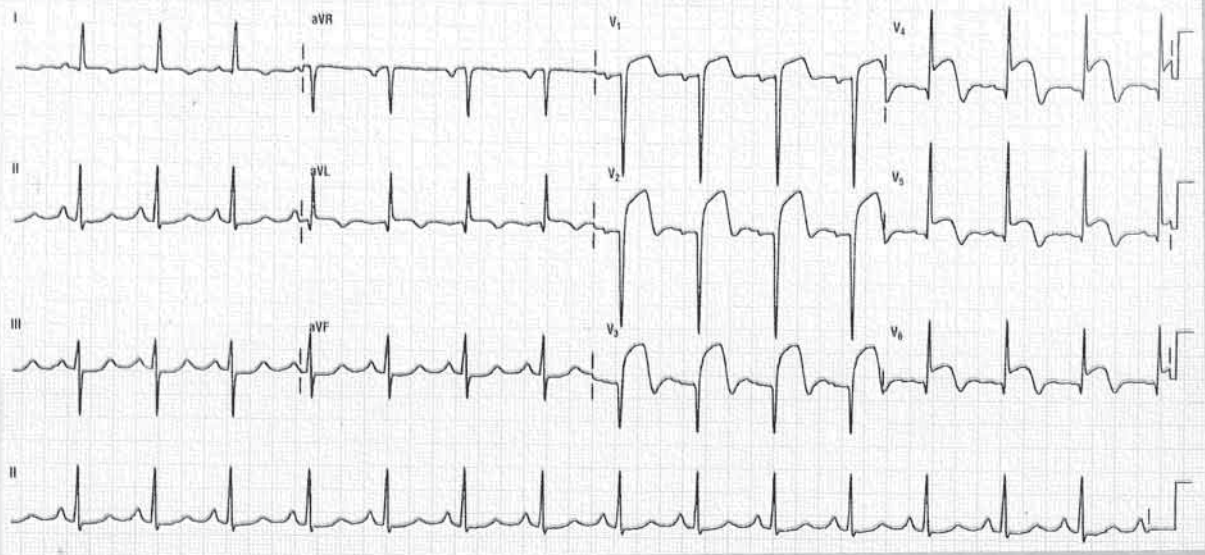
COMMENT

- **Regularity:** Regular.
- **Rate:** 215/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----
- **Ventricular activity:** - Wide 'QRS' .
 - 'T' opposite 'QRS'.
- **P : QRS:** AV dissociation.

DIAGNOSIS

- Ventricular tachycardia.

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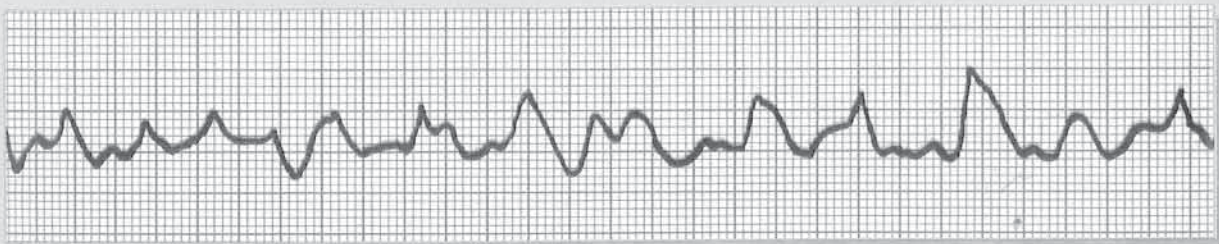
REPORT

- **Regularity:** Regular.
- **Rate:** 90/minute.
- **P:** Tall and peaked (P-pulmonale) in II.
- **PR:** Normal.
- **QRS:**
 - **Width:** Normal.
 - **Amplitude:** Normal.
 - **Axis:** Normal.
 - **Waves:** Pathological 'Q' in $V_1 - V_3$.
- **ST:** Elevated in $V_1 - V_6$.
- **T:** Inverted in $V_2 - V_6$ & I & aVL.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Right atrial dilatation.
- Acute extensive anterior myocardial infarction.
- High lateral myocardial ischemia

38



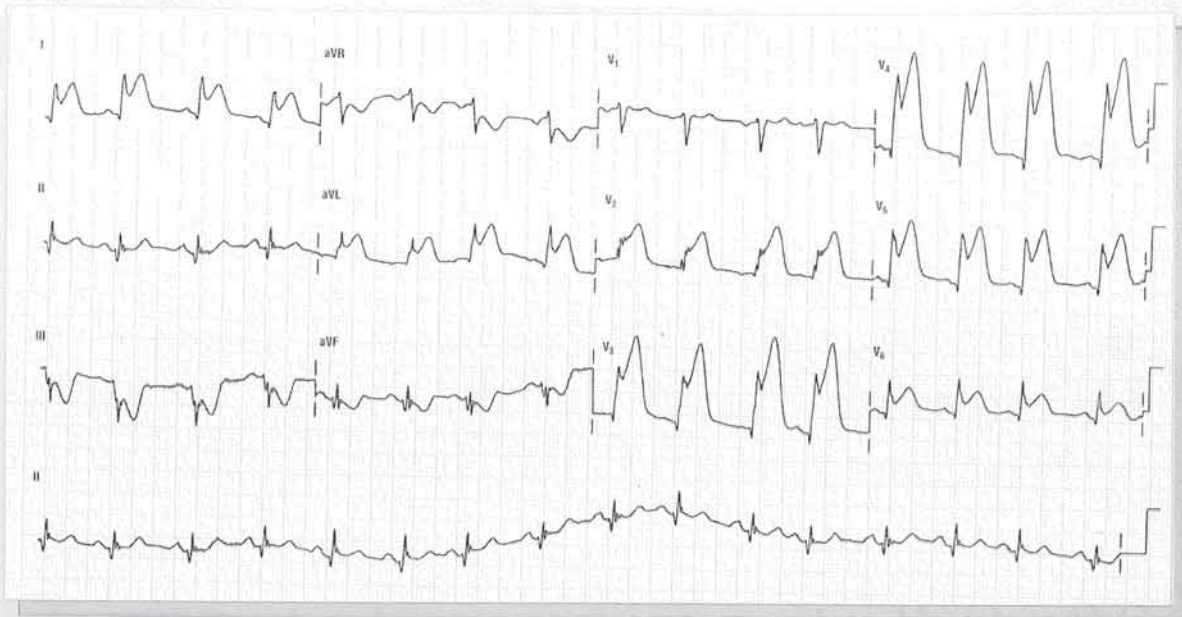
COMMENT

- **Regularity:** -----.
- **Rate:** -----.
- **Atrial activity:** -----
- **PR:** -----
- **Ventricular activity:** No 'QRS'.
- **P : QRS:** -----.

DIAGNOSIS

- Ventricular Fibrillation.

39



REPORT

- **Regularity:** Irregular.
- **Rate:** 90/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
 - **Amplitude:** Normal.
 - **Axis:** Horizontal.
 - **Waves:** Normal.
- **ST:** - Elevated in $V_2 - V_6$ & I & aVL.
 - Depressed in III & aVF.
- **T:** - Hyperacute in $V_2 - V_6$ & I & aVL.
 - Inverted in III & aVF.
- **QT:** Normal.

DIAGNOSIS

- Sinus arrhythmia of normal rate
- Hyperacute extensive anterior myocardial infarction.
- Reciprocal "ST" $\downarrow\downarrow$ in inferior leads

40



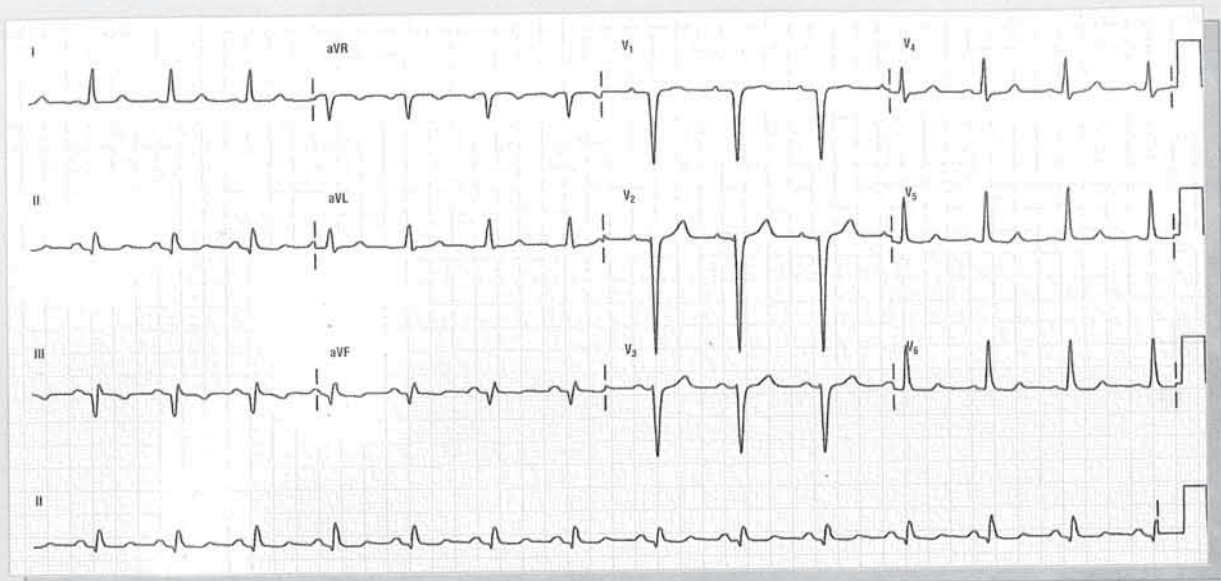
COMMENT

- **Regularity:** Regular.
- **Rate:** 30/minute.
- **Atrial activity:** -----.
- **PR:** -----
- **Ventricular activity:** - Wide 'QRS' .
 - 'T' opposite 'QRS'.
- **P : QRS:** -----

DIAGNOSIS

- Escape idioventricular rhythm.

41



REPORT

- **Regularity:** Regular.
- **Rate:** 80/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
- **Amplitude:** Normal.
- **Axis:** Horizontal.
- **Waves:** Pathological 'Q' in III & aVF.
- **ST:** Normal.
- **T:** Inverted in III & aVF.
- **QT:** -----

DIAGNOSIS

- Normal sinus rhythm.
- Inferior myocardial infarction.

42



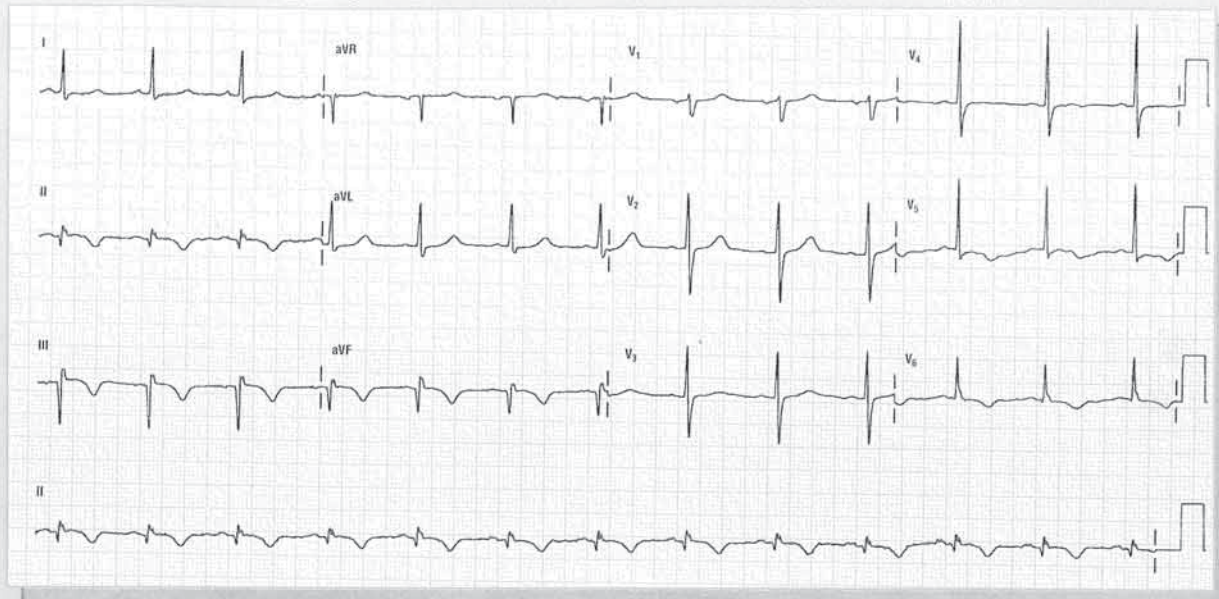
COMMENT

- **Regularity:** Irregular.
- **Rate:** >300/minute.
- **Atrial activity:** Invisible 'P'.
- **PR:** -----
- **Ventricular activity:** Wide 'QRS' of variable shape.
- **P : QRS:** -----

DIAGNOSIS

- Torsades de Pointes.

43



REPORT

- **Regularity:** Regular.
- **Rate:** 75/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
- **Amplitude:** Normal.
- **Axis:** -15° (Horizontal axis).
- **Waves:** Pathological 'Q' in II, III & aVF.
- Tall 'R' in V₂-V₄.
- **ST:** Normal.
- **T:** Symmetrically inverted in II, III, aVF, V₅ & V₆.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Evolving inferior & posterior myocardial infarction.
- low lateral myocardial ischemia.

44



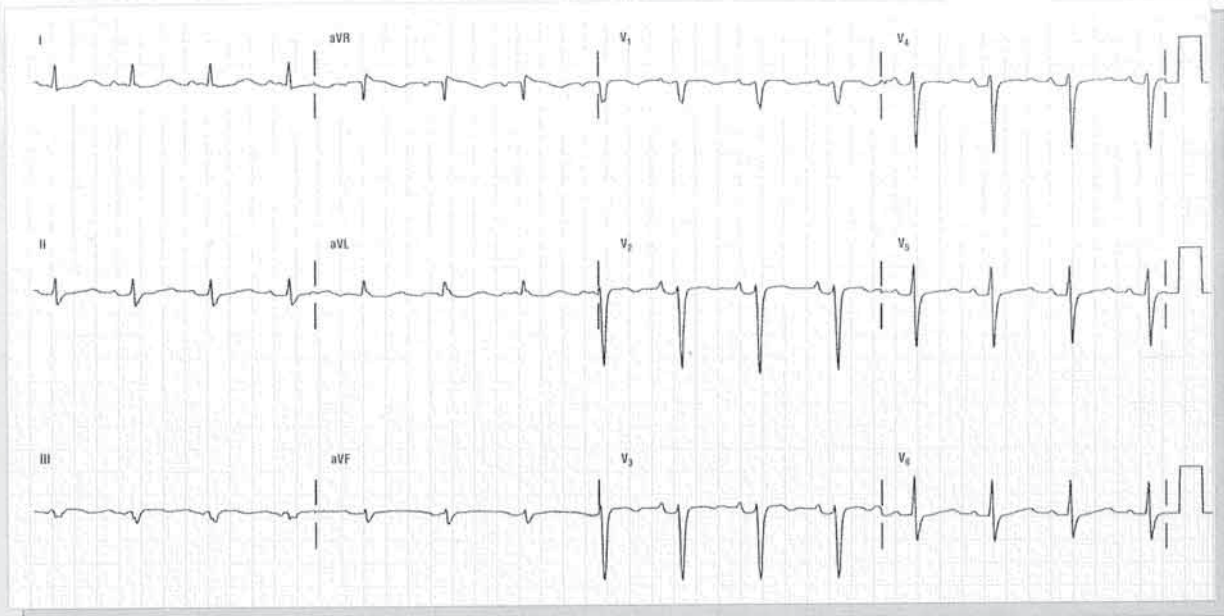
COMMENT

- **Regularity:** Regular.
- **Rate:** 65/minute.
- **Atrial activity:** -----.
- **PR:** -----.
- **Ventricular activity:** - Wide 'QRS'.
- 'T' opposite 'QRS'.
- **P : QRS:** -----.

DIAGNOSIS

- Accelerated idioventricular rhythm.

45



REPORT

- **Regularity:** Regular.
- **Rate:** 90/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
- **Amplitude:** In I + II + III < 15mm.
- **Axis:** -30° (Horizontal axis).
- **Waves:** . Poor 'R' progression in chest leads.
- **ST:** Normal.
- **T:** - Inverted in V₁ – V₄.
- Flat in III & aVF.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Low voltage 'QRS'.
- Old antero-septal myocardial infarction.
- Inferior myocardial ischemia

46



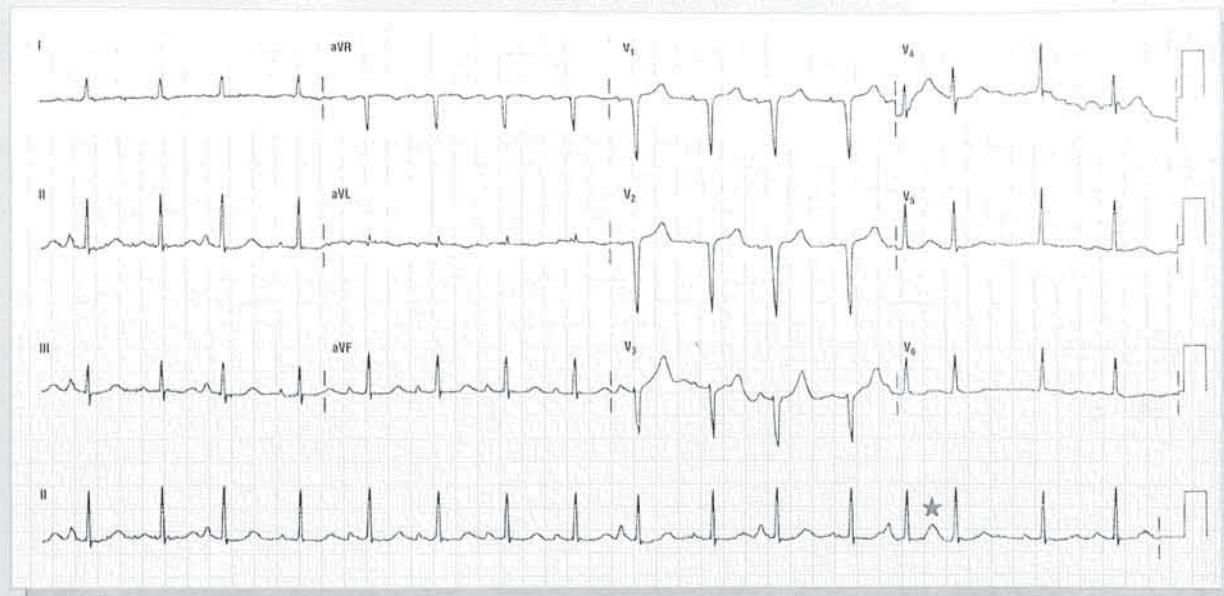
COMMENT

- **Regularity:** Bigeminy pattern.
- **Rate:** 80/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----
- **Ventricular activity:** - Wide 'QRS' + 'T' opposite 'QRS' in beat 2, 4, 6 & 8.
- **P : QRS:** -----

DIAGNOSIS

- Ventricular Bigeminy.

47



REPORT

- **Regularity:** Irregular.
- **Rate:** 100/minute.
- **P:** ≥ 3 of different shapes.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
- **Amplitude:** Normal.
- **Axis:** Normal.
- **Waves:** Pathological 'Q' in $V_1 - V_2$.
- **ST:** Normal.
- **T:** Flat in $V_5 - V_6$ & I & aVL.
- **QT:** Normal.

DIAGNOSIS

- Wandering atrial pacemaker.
- Old anteroapical myocardial infarction.

48



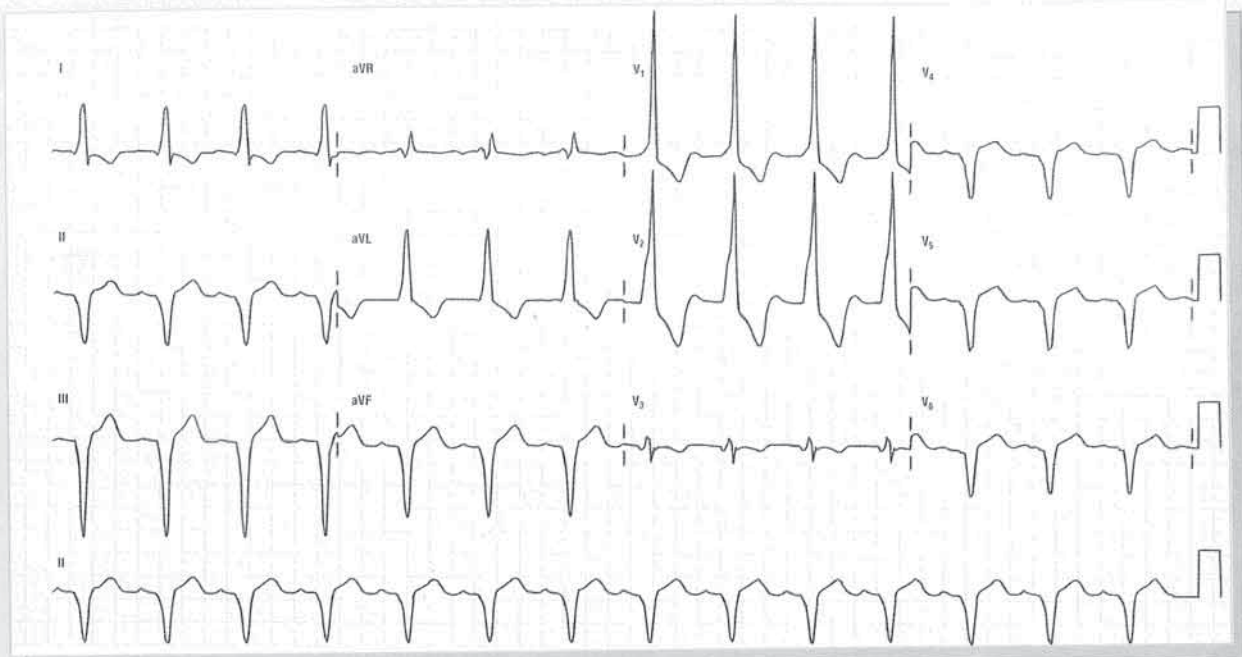
COMMENT

- **Regularity:** Regular with occasional irregularity
- **Rate:** 70/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----
- **Ventricular activity:** - Wide 'QRS' + 'T' opposite 'QRS' in beat 3.
- **P : QRS:** -----

DIAGNOSIS

- Premature ventricular beat with normal sinus rhythm.

49



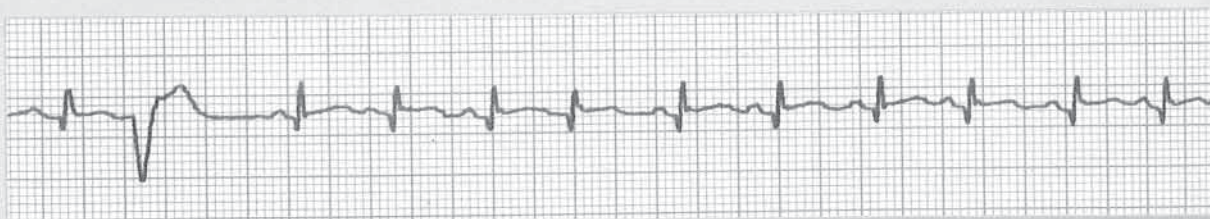
REPORT

- **Regularity:** Regular.
- **Rate:** 70/minute.
- **P:** Normal.
- **PR:** Short.
- **QRS:** - **Width:** Wide.
 - **Amplitude:** 'R' in aVL > 13 mm. R/S ratio in V₁ > 1.
 - **Axis:** Left axis deviation.
 - **Waves:** Delta wave appears in all leads.
- **ST:** Normal.
- **T:** Inverted in V₄ - V₆, I & aVL.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Wolf Parkinson White syndrome.

50



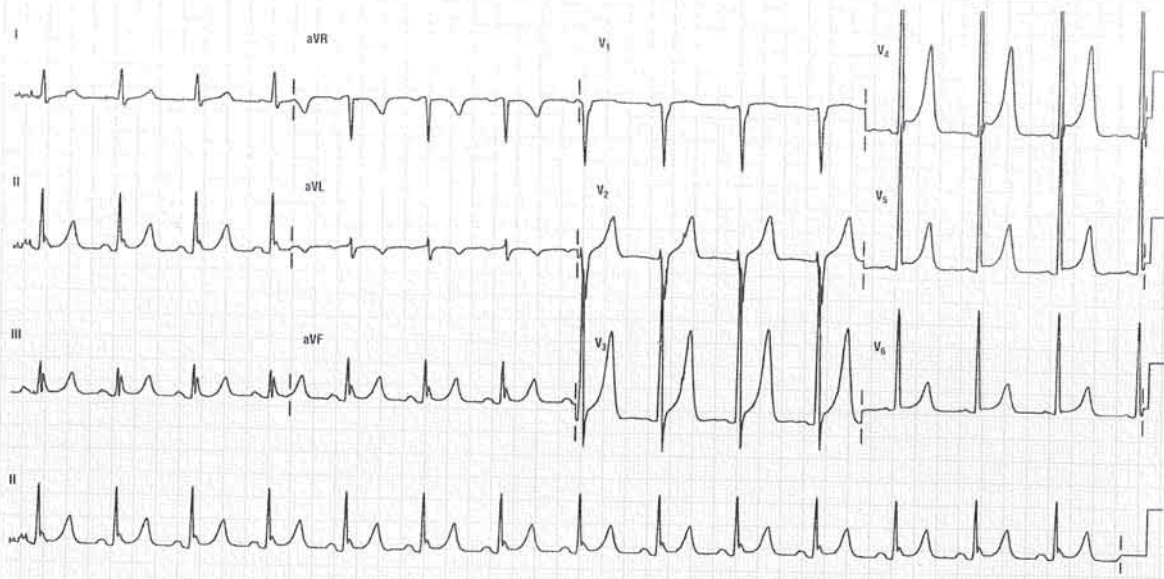
COMMENT

- **Regularity:** Regular with occasional irregularity
- **Rate:** 125/minute.
- **Atrial activity:** Sinus 'P' + Atrial 'P' in beat (6)
- **PR:** -----
- **Ventricular activity:** - Wide 'QRS' + 'T' opposite 'QRS' in beat 2.
- **P : QRS:** -----

DIAGNOSIS

- Premature ventricular beat(2)&Premature atrial beat(6) with sinus tachycardia.

51



REPORT

- **Regularity:** Regular.
- **Rate:** 80/minute.
- **P:** Normal.
- **PR:** Normal.
- **QRS:** - **Width:** Normal.
 - **Amplitude:** . 'R' in $V_5 = 33 \text{ mm}$ ($>25\text{mm}$).
 - **Axis:** Normal.
 - **Waves:** -----
- **ST:** -----
- **T:** Hyperacute in $V_3 - V_4$.
- **QT:** Normal.

DIAGNOSIS

- Normal sinus rhythm.
- Left ventricular enlargement.
- Hyperkalemia.

52



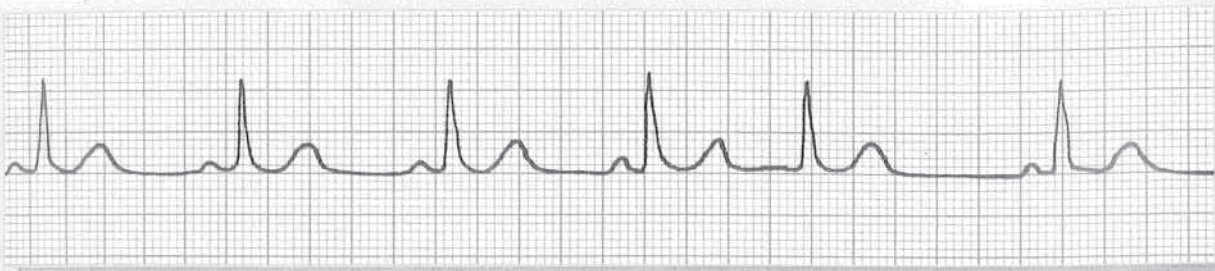
COMMENT

- **Regularity:** Regular with occasional irregularity
- **Rate:** 80/minute.
- **Atrial activity:** Sinus 'P' + atrial 'P' in beat 3.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Atrial premature beat with normal sinus rhythm.

53



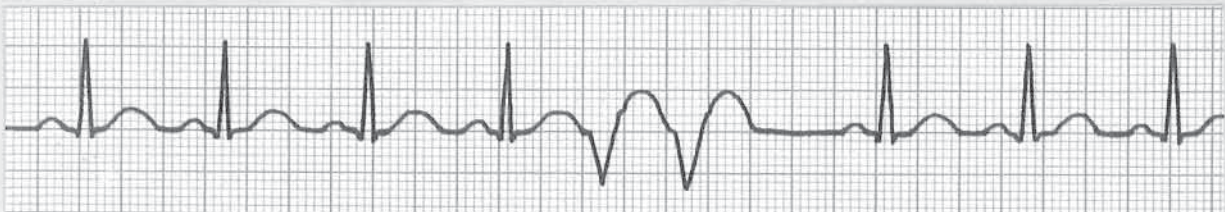
COMMENT

- **Regularity:** Regular with occasional irregularity
- **Rate:** 60/minute.
- **Atrial activity:** Sinus 'P' except beat 5.
- **PR:** -----
- **Ventricular activity:** -----
- **P : QRS:** -----

DIAGNOSIS

- Premature junctional beat N° 5 with normal sinus rhythm.

54



COMMENT

- **Regularity:** Regular with occasional irregularity
- **Rate:** 90/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** -----
- **Ventricular activity:** Wide 'QRS' + 'T' opposite 'QRS' in beat 5 & 6.
- **P : QRS:** -----

DIAGNOSIS

- Ventricular couplet with normal sinus rhythm.

55



COMMENT

- **Regularity:** Regular .
- **Rate:** 55/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** Uniformly prolonged (6mm).
- **Ventricular activity:** -----
- **P : QRS:** Constant relation.

DIAGNOSIS

- First degree AV block

56



COMMENT

- **Regularity:** Irregular .
- **Rate:** 60/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** Progressively prolonged.
- **Ventricular activity:** -----
- **P : QRS:** 4 : 3.

DIAGNOSIS

- Wenckebach AV block 4 : 3

57



COMMENT

- **Regularity:** Regular .
- **Rate:** 40/minute.
- **Atrial activity:** Sinus 'P'.
- **PR:** Uniformly prolonged (7mm).
- **Ventricular activity:** Wide 'QRS'.
- **P : QRS:** 2 : 1.

DIAGNOSIS

- Mobitz type II 2 : 1.
- First degree AV block.

58



COMMENT

- **Regularity:** Regular .
- **Rate:** 50/minute.
- **Atrial activity:** Sinus 'P', 75/minute.
- **PR:** Variable.
- **Ventricular activity:** - Wide 'QRS'.
- 'T' opposite 'QRS' .
- **P : QRS:** AV dissociation..

DIAGNOSIS

- Complete heart block